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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AN, SHAWN S

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 01/23/2004

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/724,740

Applicant(s)

CARRIG, JAMES J.

Examiner

Shawn S An

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Request for Continued Examination

1. The request filed on 11/17/03 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 09/724,740 is acceptable and a RCE has been established. An action on the RCE follows.

Response to Amendment

2. As per Applicant's instructions in Paper 10 as filed on 11/17/03, claims 1, 6, and 11 have been amended.

Response to Remarks

3. Applicant's remarks filed on 11/17/03 have been fully considered but they are not persuasive. The Applicant presents arguments of which Knee's and Jeon's references A) do not create partial decoding from non-erroneous coefficients, and B) do not distinguish among erroneous and non-erroneous coefficients when decoding the video stream into coefficients. Hence, C) there is no motivation in the art for the combination. Furthermore, the Applicant asserts that D) Knee's partial decoding creates the coefficients, but, it does not use the values of the coefficients to partially decode the video.

Note: the Examiner requests to the Applicant, where, specifically in the specification, is the partial decoding method as claimed.

In response to A), B), C), Knee teaches an error concealment flag (col. 7, line 28), and partial decoder (Fig. 1, 14, 18) for partially decoding the video bitstream (col. 6, lines 6-10). Knee's error concealment concept is used to eliminates/hide the error throughout the decoding process. Furthermore, Knee never teaches the partial decoding from erroneous DCT coefficients.

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Therefore, one of skill in the art would easily recognize/presume that Knee's partial decoder partially decodes the pixel values (DCT coefficients) where there are no errors.

Henceforth, it would have been considered obvious to a person of ordinary skill in the relevant art employing a decoding apparatus/method as taught by Jeon et al to incorporate the partial decoder as taught by Knee et al so as to create partial decodings of the pixel values where there are no errors among received coefficients for motivations such as efficient fast processing decoding time as well as saving costs associated with expensive full decoding computations, so that Joen et al can update the value for each erroneous coefficient based on the partial decodings of the block for reducing frame differences and minimizing blocking artifacts caused by errors.

Moreover, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to D), indeed, Knee creates the coefficients. Furthermore, Knee's partial decoder does use the values of the coefficients (encoded DCT coefficients) to partially decode the video signal to some intermediate stage, for example, DCT coefficients (col. 4, lines 49-52). Therefore, Knee teaches using received values of the coefficients (encoded DCT coefficients) to create partial decodings of the pixel values (decoded DCT coefficients) where there are no errors.

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeon et al (5,937,101) in view of Knee et al (6,285,716 B1).

Regarding claims 1-2 and 6-7, Jeon et al discloses an apparatus/method, comprising:
means for receiving a block of transform domain coefficients (Fig. 2, QF (u,v)) and
corresponding error flags (Fig. 8, Adjust Factor);

means for estimating an initial (expected) value for each erroneous (lost or damaged)
coefficients (col. 6, lines 46-59; col. 9, lines 53-58);

means for decoding pixel values of the block (Fig. 2, 22 and 23), using the initial value of
the coefficients (abs.) to create predictive decodings of the pixel values (Fig. 2, A3, 24), where
there are errors (col. 9, lines 53-58);

means for updating the value for each erroneous coefficient based on the predicted
decodings of the block (Fig. 8, 31); and

means for updating pixel values of the block (Fig. 8, 34) using the updated values of the
coefficients (col. 8, lines 5-8 and lines 59-64).

Jeon et al does not specifically disclose receiving coefficients to create partial decodings of
the pixel values where there are no errors, and updating the value for each erroneous coefficient
based on the partial decodings of the block.

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However, Knee et al teaches an error concealment flag (col. 7, line 28), and partial decoder (Fig. 1, 14, 18) for partial decoding, and to create partial decodings of the pixel values (decoded DCT coefficients) where there are no errors (col. 4, lines 49-52).

Furthermore, the concept of partial decoding is well known in the art for achieving faster processing time and avoiding costs associated with expensive full decoding computations. Moreover, Knee never teaches the partial decoding from erroneous DCT coefficients. Therefore, one of skill in the art would easily recognize/presume that Knee's partial decoder partially decodes the pixel values (IDCT coefficients) where there are no errors.

Henceforth, it would have been considered obvious to a person of ordinary skill in the relevant art employing a decoding apparatus/method as taught by Jeon et al to incorporate the partial decoder as taught by Knee et al so as to create partial decodings of the pixel values where there are no errors among received coefficients for motivations such as efficient fast processing decoding time as well as saving costs associated with expensive full decoding computations, so that Joen et al can update the value for each erroneous coefficient based on the partial decodings of the block for reducing frame differences and minimizing blocking artifacts caused by errors.

As per amended limitation, the Examiner takes official notice that transmission error caused by the transmission of the coefficients are well known in the art. (See, Catros (4,558,361)). Therefore, it would have been obvious to include at least one erroneous coefficient with the other erroneous coefficients.

Regarding claims 3 and 8, Jeon et al discloses applying the transform domain coefficients to a transform (Fig. 2, 23).

Regarding claims 4 and 9, Jeon et al discloses minimizing a least square equation (col. 7, eq. 17).

Regarding claims 5 and 10, Jeon et al does not specifically discloses means for displaying the updated pixel values.

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However, the Examiner takes official notice that a display device displaying decoded pixel values are well known in the art for a well known reason of visual entertainment, business, education, etc.

Furthermore, it is considered quite obvious for a conventional decoder to decode the encoded/compressed video image data including the updated pixel values for displaying decoded video image data.

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing a decoding apparatus/method as taught by Jeon et al to incorporate the well known conventional display device for a well known reason of displaying the decoded video image data including the updated pixel values.

6. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeon et al (5,937,101) in view of Knee et al (6,285,716 B1) and Florencio et al (6,373,894 B1).

Regarding claims 11-12, Jeon et al discloses a method, comprising:

receiving a block of transform domain coefficients (Fig. 2, QF (u,v)) and corresponding error flags (Fig. 8, Adjust Factor);

estimating an initial (expected) value for each erroneous (lost or damaged) coefficients (col. 6, lines 46-59; col. 9, lines 53-58);

decoding pixel values of the block (Fig. 2, 22 and 23), using the initial value of the coefficients (abs.) to create predictive decodings of the pixel values (Fig. 2, A3, 24), where there are errors

(col. 9, lines 53-58);

updating the value for each erroneous coefficient based on the predicted decodings of the block (Fig. 8, 31); and

updating pixel values of the block (Fig. 8, 34) using the updated values of the coefficients (col. 8, lines 5-8 and lines 59-64).

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Jeon et al does not specifically disclose receiving coefficients to create partial decodings of the pixel values where there are no errors, and updating the value for each erroneous coefficient based on the partial decodings of the block, and a computer readable medium having instructions to execute the above claimed steps.

However, Knee et al teaches an error concealment flag (col. 7, line 28), and partial decoder (Fig. 1, 14, 18) for partial decoding, and to create partial decodings of the pixel values (decoded DCT coefficients) where there are no errors (col. 4, lines 49-52). Furthermore, the concept of partial decoding is well known in the art for achieving faster processing time, and a computer readable medium (software/program) is conventionally well known in the art.

Moreover, Florencio et al teaches method and apparatus for recovering quantized coefficients including a decoder that can be represented by a computer readable medium having instructions (Fig. 4, 410; col. 8, lines 19-28).

Therefore, it would have been considered to a person of ordinary skill in the relevant art employing a decoding apparatus/method as taught by Jeon et al to incorporate the partial decoder as taught by Knee et al, so as to create partial decodings of the pixel values where there are no errors among received coefficients for an efficient fast processing decoding time, so that Jeon et al can update the value for each erroneous coefficient based on the partial decodings of the block for reducing frame differences, and minimizing blocking artifacts caused by errors, and further incorporating Florencio et al's decoder that can be represented by a computer readable medium having instructions which, when executed by a processing system, cause the system to perform methods such as the claimed steps above for portability and cost effectiveness.

As per amended limitation, the Examiner takes official notice that transmission error caused by the transmission of the coefficients are well known in the art. (See, Castros (4,558,361)). Therefore, it would have been obvious to include at least one erroneous coefficient caused by the transmission with the other erroneous coefficients.

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Regarding claim 13, Jeon et al discloses applying the transform domain coefficients to a transform (Fig. 2, 23).

Regarding claim 14, Jeon et al discloses minimizing a least square equation (col. 7, eq. 17).

Regarding claim 15, Jeon et al does not specifically discloses means for displaying the updated pixel values.

However, the Examiner takes official notice that a display device displaying decoded pixel values are well known in the art for a well known reason of visual entertainment, business, education, etc.

Furthermore, it is considered quite obvious for a conventional decoder to decode the encoded/compressed video image data including the updated pixel values for displaying decoded video image data.

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing a decoding apparatus/method, as taught by Jeon et al to incorporate the well known conventional display device for a well known reason of displaying the decoded video image data including the updated pixel values.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) Catros (4,558,361), System for the compression of the flow rate of data transmitted between at least a TV transmitter and a TV receiver.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn An whose telephone number (703) 305-0099 and schedule are Tuesday through Friday.

SSA



SHAWN AN
PATENT EXAMINER

Primary Patent Examiner

January 21, 2004